

What is claimed is:

1. A probe for use in photoplethysmographic (PPG) measurement,
comprising:

a light source unit including a light source that contacts a
predetermined site of an object and emits light onto the predetermined site;
a photodetector unit positioned facing the light source unit to receive
the light emitted from the light source unit and transmitted through the object;
a body having a space for receiving the object and in which the light
source unit and the photodetector unit are positioned in a same optical axis;
and

a pressure application unit coupled to the body for applying a
pressure to the object via the light source unit.

2. The probe as claimed in claim 1, wherein the light source unit
comprises a light emitting diode as a light source.

3. The probe as claimed in claim 1, wherein the photodetector unit comprises a photoelectric converter for converting light detected by the photodetector unit into an electric signal.

4. The probe as claimed in claim 1, wherein the pressure application unit is aligned in the same optical axis as the light source unit and the photodetector unit.

5. The probe as claimed in claim 1, wherein the pressure application unit comprises:

a nut attached to an upper surface of the light source unit to be movable in a vertical direction; and

a bolt coupled to the nut.

6. The probe as claimed in claim 5, further comprising:

a heat dissipating plate between the nut and the light source unit.

7. The probe as claimed in claim 5, further comprising:

an elastic member between the nut and the light source unit.

8. The probe as claimed in claim 7, further comprising:

a heat dissipating plate between the elastic member and the light source unit.

9. The probe as claimed in claim 1, wherein the pressure

application unit comprises:

a structure having a horizontal portion and a vertical portion, wherein the horizontal portion contacts an upper surface of the body when the body is void of the object and protrudes above the upper surface of the body when the object is inserted into the body, and wherein the vertical portion of the structure is connected in a perpendicular direction to the horizontal portion of

the structure and has an end connected to the light source through a through hole in an upper horizontal portion of the body; and

an elastic member surrounding the vertical portion of the structure between the body and the light source unit such that an elastic force is exerted on the body and the light source unit.

10. The probe as claimed in claim 9, wherein the elastic member is a spring having an inner diameter that is at least equal to a diameter of the through hole extending through the upper horizontal portion of the body.

11. The probe as claimed in claim 9, further comprising:
a heat dissipating plate between the vertical portion of the structure and the light source unit.

12. The probe as claimed in claim 1, wherein the pressure application unit comprises:

a structure having a weight sufficient to apply pressure to the object,
and a horizontal portion and a vertical portion, wherein the vertical portion of
the structure is connected in a perpendicular direction to the horizontal
portion of the structure and has an end connected to the light source unit
through a through hole in an upper horizontal portion of the body.

13. The probe as claimed in claim 12, further comprising:

a weight element placed on the horizontal portion of the structure to
increase an amount of pressure applied to the object via the light source
unit.

14. The probe as claimed in claim 12, further comprising:

a heat dissipating plate between the vertical portion of the structure
and the light source unit.

15. The probe as claimed in claim 13, further comprising:

a heat dissipating plate between the vertical portion of the structure and the light source unit.

16. The probe as claimed in claim 1, further comprising:

a pressure application break button electrically connected to the probe for allowing the subject or an operator to cease the application of pressure by the pressure application unit.

17. A biological signal measuring system, comprising:

a probe in which light is emitted onto a predetermined site of an object and the light transmitted through the object is detected;

a controller for controlling the operation of the probe and for recording and analyzing signals output from the probe;

a detected light intensity display unit for displaying an intensity of light detected by the probe; and

a biological signal display unit connected to the detected light intensity display unit for displaying a biological signal measured from an object,

wherein the probe includes:

a light source unit including a light source that contacts a predetermined site of the object and emits light onto the predetermined site;

a photodetector unit positioned facing the light source unit for receiving the light emitted from the light source unit and transmitted through the object;

a body having a space for receiving the object and in which the light source unit and the photodetector unit are positioned in a same optical axis; and

a pressure application unit coupled to the body for applying pressure to the object via the light source unit.

18. The biological signal measuring system as claimed in claim 17,
wherein the pressure application unit is aligned in the same optical axis as
the light source unit and the photodetector unit.

19. The biological signal measuring system as claimed in claim 17,
wherein the pressure application unit comprises:

a nut attached to an upper surface of the light source unit to be
movable in a vertical direction; and
a bolt coupled to the nut.

20. The biological signal measuring system as claimed in claim 19,
further comprising:

a heat dissipating plate between the nut and the light source unit.

21. The biological signal measuring system as claimed in claim 19,
further comprising:

an elastic member between the nut and the light source unit.

22. The biological signal measuring system as claimed in claim 21,

further comprising:

a heat dissipating plate between the elastic member and the light source unit.

23. The biological signal measuring system as claimed in claim 17,

wherein the pressure application unit comprises:

a structure having a horizontal portion and a vertical portion, wherein the horizontal portion contacts an upper surface of the body when the body is void of the object and protrudes above the upper surface of the body when the object is inserted into the body, and wherein the vertical portion of the structure is connected in a perpendicular direction to the horizontal portion of the structure and has an end connected to the light source through a through hole in an upper horizontal portion of the body; and

an elastic member surrounding the vertical portion of the structure between the body and the light source unit such that an elastic force is exerted on the body and the light source unit.

24. The biological signal measuring system as claimed in claim 23, further comprising:

a heat dissipating plate between the vertical portion of the structure and the light source unit.

25. The biological signal measuring system as claimed in claim 17, wherein the pressure application unit comprises:

a structure having a weight sufficient to apply pressure to the object, and a horizontal portion and a vertical portion, wherein the vertical portion of the structure is connected in a perpendicular direction to the horizontal portion of the structure and has an end connected to the light source unit through a through hole in an upper horizontal portion of the body.

26. The biological signal measuring system as claimed in claim 25,

further comprising:

a weight element placed on the horizontal portion of the structure to increase an amount of pressure applied to the object via the light source unit.

27. The biological signal measuring system as claimed in claim 25,

further comprising:

a heat dissipating plate between the vertical portion of the structure and the light source unit.

28. The biological signal measuring system as claimed in claim 26,

further comprising:

a heat dissipating plate between the vertical portion of the structure and the light source unit.

29. The biological signal measuring system as claimed in claim 17, wherein the biological signal display unit is a photoplethysmographic (PPG) display unit that displays a photoplethysmographic (PPG) wave from the object.

30. The biological signal measuring system as claimed in claim 17, wherein the controller is a microprocessor.

31. The biological signal measuring system as claimed in claim 29, further comprising:

a device selected from the group consisting of: an analog-to-digital converter (ADC), a programmable logic device (PLD), and a processor for recording a measured PPG wave.